

**CLAIMS**

**What is claimed is:**

**1. A method comprising:**

**sending a request for a first network operation from a first network stack layer to a second network stack layer using a token-based asynchronous inter-layer communication protocol in an operating system independent environment;**

**performing, with the first network stack layer, a second network operation prior receiving an indication of completion of the first network operation; and**

**sending the indication of completion of the first network operation from the second network stack layer to the first network stack layer via an embedded firmware agent in response to completion of the first network operation.**

**2. The method of claim 1 wherein the first network stack operation comprises a data transmission operation.**

**3. The method of claim 1 wherein the first network stack operation comprises receipt of data via a network connection.**

**4. The method of claim 1 wherein the operating system independent environment comprises a pre-boot execution environment.**

5. The method of claim 1 wherein the first network stack layer and the second network stack layer are both communicatively coupled with an embedded firmware agent in a host system that supports the asynchronous token-based network stack.

6. The method of claim 1 wherein the indication of completion includes at least the token.

7. An apparatus comprising:  
an embedded firmware agent capable of functioning in an operating system independent manner;  
control circuitry to support a token-based asynchronous inter-layer communication protocol communicatively coupled with the embedded firmware agent to send a request for a first network operation from an upper network stack layer to a lower network stack layer using a request including a token, performing, with the upper network stack layer, a second network operation prior receiving an indication of completion of the first network operation, and send the indication of completion of the first network operation from the second network stack layer to the first network stack layer via an embedded firmware agent in response to completion of the first network operation.

8. The apparatus of claim 7 wherein the first network stack operation comprises a data transmission operation.

9. The apparatus of claim 7 wherein the first network stack operation comprises receipt of data via a network connection.

10. The apparatus of claim 7 wherein the operating system independent environment comprises a pre-boot execution environment.

11. The apparatus of claim 7 wherein the indication of completion includes at least the token.

12. An article comprising a computer-readable medium having stored thereon instructions that, when executed, cause one or more processing components to:

send a request for a first network operation from a first network stack layer to a second network stack layer using a token-based asynchronous inter-layer communication protocol in an operating system independent environment;

perform, with the first network stack layer, a second network operation prior receiving an indication of completion of the first network operation; and

send the indication of completion of the first network operation from the second network stack layer to the first network stack layer via an embedded firmware agent in response to completion of the first network operation.

13. The article of claim 12 wherein the first network stack operation comprises a data transmission operation.

14. The article of claim 12 wherein the first network stack operation comprises receipt of data via a network connection.

15. The article of claim 12 wherein the operating system independent environment comprises a pre-boot execution environment.

16. The article of claim 12 wherein the indication of completion includes at least the token.

17. A system comprising:  
one or more processing components;  
a network interface coupled with the one or more processing components;  
and  
a computer-readable medium coupled with the one or more processing components having stored thereon instructions that, when executed, cause the one

or more processing components to send a request for a first network operation from a first network stack layer to a second network stack layer using a token-based asynchronous inter-layer communication protocol in an operating system independent environment, perform, with the first network stack layer, a second network operation prior receiving an indication of completion of the first network operation, and send the indication of completion of the first network operation from the second network stack layer to the first network stack layer via an embedded firmware agent in response to completion of the first network operation.

18. The system of claim 17 wherein the first network stack operation comprises a data transmission operation.

19. The system of claim 17 wherein the first network stack operation comprises receipt of data via a network connection.

20. The system of claim 17 wherein the operating system independent environment comprises a pre-boot execution environment.